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ABSTRACT

The auditory discrimination ability of pupils who are generally classified as "socioeconomically" or "culturally" disadvantaged is the subject of recent research. The concept of the disadvantaged child that has auditory discrimination difficulties--and associated with them problems in reading and perhaps even speaking--was quickly and widely accepted in the literature dealing with the language problem of the disadvantaged. The possibility that the auditory discrimination problem of the disadvantaged child may reflect a language difference is occasionally alluded to in the literature dealing with the so-called "deficit phenomena." The instrument most widely used in the testing of auditory discrimination is the Wepman test. The most plausible explanation of the auditory discrimination deficit of the disadvantaged is simply that the categorizations (same vs. different) which are expected on the testing instruments are those of standard English and do not correspond to the social dialect of blacks and/or lower socioeconomic status groups. The difference in auditory discrimination between disadvantaged and non-disadvantaged tends to disappear as children progress through school. (CK)

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AUDITORY DISCRIMINATION AND THE "DISADVANTAGED:" DEFICIT OR DIFFERENCE

Robert L. Politzer

TE 002 509

It is generally assumed on a "common sense" as well as research basis that there is a relationship between auditory discrimination ability and reading readiness as well as performance in reading tasks. The relationship between auditory discrimination and reading achievement has been demonstrated in various research studies (Bond 1935, Wepman 1960, Wheeler and Wheeler 1954, C. P. Deutsch 1967). Poor and retarded readers tend to have auditory discrimination scores which are lower than those of other pupils.

It is, no doubt, for the above mentioned reason that recent research has concerned itself with the auditory discrimination ability of pupils who are generally classified as "socio-economically" or "culturally" disadvantaged. Since these pupils belong to a group that is characterized by low achievement in reading and language arts generally speaking, we might expect that they would also perform badly in auditory discrimination tasks. In

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general, research has confirmed that hypothesis. Thus, Martin Deutsch found in a well-known study that lower auditory discrimination scores are associated with both socio-economic status and race (M. Deutsch 1967, p. 365). The next logical step seems to be a look for environmental factors that would account for this lower auditory discrimination ability. Cynthia P. Deutsch suggested that the noisy slum environment may be responsible for the auditory discrimination deficit of the Disadvantaged. ". . . it may well be that lower-class children who live in very noisy environments do not develop the requisite auditory discrimination abilities to learn to read well—or adequately—early in their school careers" (C. P. Deutsch 1967, p. 275).

The concept of the disadvantaged child that has auditory discrimination difficulties,—and associated with them problems in reading and perhaps even speaking—was rather quickly and widely accepted in the literature dealing with the language problems of the Disadvantaged. Thus, the author of a paper on "Teaching the Disadvantaged" (published by the National Education Association in the series of "What Research Has to Say") states that "considerable information is already available concerning undetected and untreated defects in very young children. These include unintelligible pronunciation, faulty vision and deficient hearing, all of which block learning to read, spell and write . . ." "Many children do not hear final syllables unless the teacher articulates clearly and trains them to listen" (Noar 1967, p. 16). The idea that the inability to hear and to discriminate correctly may be responsible for all language problems of the Disadvantaged can be found in the work of scholars like Carl Bereiter and Siegfried Engelman who assert that "many disadvantaged children are so 'deaf' to the segmental character of English sentences, in fact, that they cannot even detect the difference between "John is ready" and "Ready is John . . ." Little wonder then that these children "do not know how to talk in loud, clear voices. They either mumble almost inaudibly or else they yell raucously" (Bereiter and Engelman, n.d., p. 7). The picture of the disadvantaged child emerging from this discussion is that of a semi "deaf" and as a result linguistically handicapped individual.

The possibility that the auditory discrimination problem of the disadvantaged child may reflect a language difference is occasionally alluded to in the literature dealing with the so-called "deficit phenomena." Thus Martin Deutsch states that "it is important to note that the correlation with the Wepman auditory discrimination test is associated with both SES and race. What might be operative here is the presence of dialect variations in the Negro group, influencing and limiting the communication possibilities in school . . ." (M. Deutsch 1967, p. 365). However the suggestion that dialect difference may be responsible for the consistently lower auditory discrimination performance of Blacks and lower SES groups is never thought through to its logical conclusion, namely that the so-called "deficit" in auditory discrimination may be a mirage created by a misunderstanding of the task involved in the auditory discrimination test.

The instrument most widely used in the testing of auditory discrimination is the Wepman test. In the manual of directions, the author assures that "every possible match of phonemes used in English was made in phonetic categories" (Wepman 1958). The test is, in fact, based on having the pupil recognize the differences in a series of so-called minimal pairs (words differentiated by only one phoneme) of standard English, e.g., *leg/led; dim/din; clothe/clove*, etc. The task involved in having to decide whether a pair like *dim/din* is made up of identical or different items looks deceptively simple. It is not. The entire problem of how speech sounds are perceived is complex and subject to continuous and largely unresolved debate (e.g., see Lane 1966; Liberman, Cooper, Shankweiler and Studdert-

Kennedy 1967; Studdert-Kennedy, Liberman, Harris and Cooper 1970). Why is it, for instance, that we perceive the identical words uttered by different individuals as the "same," in spite of the fact that they are spoken by different voices? Why do we recognize easily the underlying "sameness" of dialectally different pronunciation of the same word? To discuss the complex problems of perception of speech sound goes beyond the scope of this article. It will suffice to point out that the decision of whether two utterances are the same or different is a complex and ambiguous task. It involves at least the following steps: (1) The utterances have to be heard. (2) They must be "perceived," in other words they are identified so that they can be retained in auditory memory. (3) They must be stored in a short term auditory memory, so that they can be compared. (4) Finally a decision must be made as to whether they belong to the same or to different categories. In other words, what is involved in each item of the auditory discrimination test is hearing, perception, auditory memory, categorization.

That performance in auditory discrimination tests is influenced by the native language of the subjects has been known to linguists for quite some time (Polivanov 1931-34). In the words of Sapon and Carroll, "The probability of perception of a given sound in a given environment is related to the language of the listener . . ." "where errors in perception occur, the direction and magnitude of many errors are systematically related to the language spoken by the listener . . ." (Sapon and Carroll 1955, pp. 67-68). This statement does not make it clear, however, just what the "error in perception" consists in. What seems most likely is that errors in perception caused by native language backgrounds are simply errors in categorization.

To give a simple example: English has two i-phonemes; /i/ as in *beat* and /ɪ/as in *bit*. If a speaker of English is asked whether or not *beat* and *bit* are the same, he will quite naturally respond that they are not. Spanish, however, has only one i-phoneme. When asked whether English *beat* or *bit* are the same, speakers of Spanish will often give an affirmative answer. Those speakers of Spanish are then said to be unable to "discriminate" between /i/ and /ɪ/, or to have difficulty in "hearing" the difference between /i/ and /ɪ/. But to say that they have difficulty in "hearing" amounts to a rather loose or at least very figurative use of language. Obviously there is no reason to assume that speakers of Spanish "hear" any worse than speakers of English (in other words are more likely to have defective hearing). Nor is there any reason to suspect that their failure to discriminate between /i/ and /ɪ/ has anything to do with a lesser auditory memory span. Speakers of Spanish "hear" and "discriminate" (in the strict sense of the term) just as well as speakers of English, but their native language has exposed them to years of practice in neglecting all differences between sounds in the [i-ɪ] range and in classifying all of them in the same category. The result is, of course, that a speaker of Spanish may hear a pair of words like *bit/beat* classify the /ɪ/ of *bit* in the same category as the /i/ of *beat*—and then pronounce *beat* and *bit* alike. It is for this reason that foreign language teachers have been using so-called auditory discrimination exercises as part of pronunciation training. In other words, speakers of Spanish must be taught to differentiate /i/ and /ɪ/—this means to assign them to different categories—before they can learn to pronounce them correctly as different sounds.

In view of the fact that in foreign language training, the influence of the native language has for some time been accepted as an important factor influencing the categorization of speech sounds, it seems rather astonishing that much of the literature dealing with the Disadvantaged continues to treat their auditory discrimination problems as related primarily to "hearing," "auditory memory span" or "faulty perception." The possibility that

hearing, perception and auditory memory span may somehow be affected adversely by low socio-economic status (e.g., noisy slum environments) does exist, of course, though it seems rather remote. By far the most plausible explanation of the auditory discrimination deficit of the Disadvantaged is simply that the categorizations (same vs. different) which are expected on the testing instruments are those of standard English and simply do not correspond to the social dialect of blacks and/or lower socio-economic status groups.

That the Fatamorgana of the auditory discrimination deficit is simply the result of different language backgrounds can be demonstrated most easily with Mexican-Americans who actually speak Spanish at home and whose English is heavily influenced by Spanish speech habits. In an experiment recently conducted at the Stanford University Center in Research and Development in Teaching, an auditory discrimination test was administered to a group of Mexican-Americans (presumably lower socio-economic status) children and to monolingual English control groups. The tests consisted of pairs of nonsense syllables. Pairs were either alike or differentiated by only one sound, and the subjects were asked to make the "same or different" judgment. The test had three parts. Differences in Part 1 were based on distinctions utilized in the French Phonemic pattern (e.g., a/ã, oe/œ̃, y/u, etc.). Part 2 relied on phonemic differences of English (ɪ/i; u/ʊ, ə/a), and Part 3 in distinctions used in Spanish (r/R; -r-/-ð-; g-/gw-, etc.). On Part 1 of the test, there was no difference in the performance of the two groups. The monolingual English speakers outperformed the Mexican-Americans in Part 2. The Mexican-Americans won on Part 3 (Politzer and McMahon 1970).

The phonological and grammatical features which differentiate lower socio-economic status social dialect in general and Black English from standard speech have been described in various publications (e.g., McDavid 1967, Labov 1967). A brief comparison of features of Black English with standard English on which the Wepman test is based leads one to suspect that many speakers of Black dialects might categorize the following pairs which the Wepman test categorization assumes to be "different" as "same."

Form I of the test:

Items: 4. leg/led, 13. thread/shred, 17/pat/pack, 18 dim/din, 25. clothe/clove, 28. sheat/sheaf, 33. shoal/showl, 40. pin/pen.

Form II:

Items: 12. gall/goal, 14. let/lick, 15. bud/bug, 20. fret/threat, 22. bum/bun, 23. lave/lathe, 36. wreath/reef.

It would be an interesting experiment to administer the Wepman test or other auditory discrimination tests to speakers of different social dialects and to determine (1) whether groups speaking different dialects perform differently on specific test items and (2) whether these differences in performance reflect differences in the speech pattern of the groups. Especially elementary school teachers involved in the teaching of children speaking non-standard dialects could then use auditory discrimination tests for becoming aware of the specific language problems of these children. (The author had hoped to include in this article some data concerning differential auditory discrimination performance of children coming from different language backgrounds as measured by the Wepman test. Unfortunately the data could not be collected in time for inclusion in this article, because the author was informed that it seemed difficult to find an "adequate" sample of children from Mexican-American or Black families in the school district in which he intended to collect the data because a large percentage of those children appeared to suffer from speech and/ or hearing problems . . .).

The difference in auditory discrimination between Disadvantaged and Non-disadvantaged tends to disappear as children progress through the school (M. Deutsch 1967, p. 365). It could be only too tempting to interpret this fact in terms of retarded maturation on the part of the disadvantaged group. What seems more likely however is that eventually the increased contact with the standard dialect teaches the non-standard speaker just what categorization he is supposed to be making. By the time he learns to make these categorizations the harm caused by not diagnosing the discrimination problem in the early grades has already been done.

The auditory discrimination problem is only a small but very concrete instance in which the language "deficit" of the disadvantaged turns out to be a simple "difference." Whether the disadvantage consists in a "deficit" or a "difference" seems, at first, relatively unimportant. Thus both W. Labov (who considers the phenomena discussed here as difference) and Cynthia P. Deutsch who speaks about auditory discrimination deficits come to similar pedagogical conclusions: "A certain amount of attention given to perception training in the first few years of school may be extremely helpful in teaching children to hear and make standard English distinctions" (Labov 1967, p. 25). "It would be possible for children with such deficiencies" (in auditory discrimination)—"or immaturities—to fall far behind in many respects of their school work and thus be unable to catch-up even when the deficiency is overcome. This could, of course, underline the importance of training in auditory discrimination early in the school career" (C. P. Deutsch 1967, p. 276). However, there are practical differences between the results of a "difference" and a "deficit" approach. First of all, the difference approach enables us to distinguish clearly the areas in which auditory discriminatiron problems exist from those in which no such problems are present. It makes it possible to focus instruction more intelligently and economically. The clear-cut awareness that we are dealing with a difference and not a deficit may also lead us to the conclusion that we should simply not expect certain auditory discriminations from students not speaking standard dialect and, that we should accept certain pronunciation mergers in their speech. Perhaps most important however is the difference of attitude implied in the difference between the two approaches. "Deficit" puts the blame on one party—"difference" implies no such judgment. It takes two to make a "difference." Martin Deutsch says that it is one of the goals of education "to program stimulation in increasingly less amorphous ways and with methods that are approximate to basic learning capabilities, so as to vitiate the effects of unfavorable environments" (M. Deutsch 1967, p.369). The difference approach recognizes the possibility that unfavorable environments may also be created by the school.

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